CLAIMS

We Claim:

1. An antibody that competitively inhibits binding of a PTN polypeptide to an antibody comprising a sequence selected from SEQ ID NOs:3, 5, 6, 7, 8, 10, 11 and 12.

2. The antibody according to Claim 1, where the antibody neutralizes at least one biological activity of PTN.

3. The antibody according to Claim 1, wherein said antibody inhibits cancer cell growth.

4. The antibody according to Claim 3, wherein said antibody inhibits cancer cell proliferation.

5. The antibody according to Claim 3, wherein said antibody inhibits metastasis of cancer cells.

6. The antibody according to Claim 1, wherein said antibody inhibits angiogenesis induced by cancer cells.

7. The antibody according to Claim 1 or an antigen-binding fragment thereof, wherein said antibody comprises an amino acid sequence selected from SEQ ID NOs:3 and 8.

8. The antibody according to Claim 1 or an antigen-binding fragment thereof, wherein said antibody comprises an amino acid sequence with at least about 60% sequence identity with a sequence selected from SEQ ID NOs:3 and 8.

9. A complementarity determining region (CDR) of an antibody comprising a sequence selected from SEQ ID NOs: 5, 6, 7, 10, 11 and 12.

10. A mature heavy chain variable region of an antibody comprising amino acid sequence SEQ ID NO: 3.

11. A mature light chain variable region of an antibody comprising amino acid sequence SEQ ID NO: 8.

12. The antibody according to Claim 1, wherein said antibody is monoclonal.

13. The monoclonal antibody according to Claim 1, wherein said antibody is a chimeric antibody, humanized antibody, or a fully human antibody.

14. The antibody according to Claim 1, wherein said antibody is an antigen-binding fragment, Fab fragment, $(Fab')_2$ fragment, or a Fv fragment.

15. The antibody of Claim 1, wherein the antibody is conjugated to a cytotoxic agent.

16. A polypeptide comprising an amino acid sequence selected from SEQ ID NOs: 3, 5, 6, 7, 8, 10, 11, and 12.

17. A polynucleotide molecule comprising a nucleotide sequence selected from SEQ ID NOs: 4 and 9.

18. A pharmaceutical composition comprising the antibody according to Claim 1 and a pharmaceutical carrier.

19. A method of neutralizing at least one biological activity of PTN in a subject in need thereof comprising administering to said subject an effective amount of an antagonist of PTN, wherein said antagonist is a polypeptide.

20. The method according to Claim 19, wherein said antagonist inhibits angiogenesis in said subject.

21. The method according to Claim 19, wherein said antagonist inhibits proliferation of cancer cells in said subject.

22. The method according to Claim 19, wherein said antagonist inhibits growth of cancer cells in said subject.

23. The method according to Claim 19, wherein said antagonist inhibits metastasis of cancer cells in said subject.

24. The method according to Claim 19, wherein said antagonist is administered to said subject in need of cancer prevention or treatment.

25. The method according to Claim 24, wherein said polypeptide is an antibody against PTN.

26. The method according to Claim 25, wherein said antibody is a monoclonal antibody.

27. The method according to Claim 26, wherein said monoclonal antibody is a chimeric antibody, humanized antibody, or fully human antibody.

28. The method according to Claim 25, wherein said antibody is conjugated to a cytotoxic agent.

29. The method according to Claim 25, wherein said antibody is an antibody comprising an amino acid sequence selected from SEQ ID NOs: 3, 5, 6, 7, 8, 10, 11 and 12; or an antigen-binding fragment of said antibody.

30. The method according to Claim 25, wherein said antibody is an antibody comprising an amino acid sequence sharing at least 60% sequence identity with SEQ ID NOs: 3, 5, 6, 7, 8, 10, 11, or 12, or an antigen-binding fragment of said antibody.

31. The method according to Claim 25, wherein the antibody binds to substantially the same epitope as the antibody according to Claim 6.

32. The method according to Claim 25, further comprising administering a chemotherapeutic agent to the subject, wherein said treatment is formulated in a manner allowing it to be administered serially or in combination with another agent for treatment of cancer.

33. The method according to Claim 24, wherein said polypeptide is an antibody against ALK.

34. A method of producing an isolated monoclonal antibody against a protein comprising:

1) selecting a host animal;

2) immunizing said host animal with a fusion protein comprising said protein connected with a T-cell epitope;

3) isolating a lymphoid cell from said host animal;

4) fusing said lymphoid cell to a myeloma cell, so that a hybrid cell is created;

5) cultivating said hybrid cell; and

6) isolating a monoclonal antibody against said protein.

35. The method according to Claim 34, wherein said T-cell epitope is OVA or cytochorme C.

36. The method according to Claim 34, wherein said protein is a first protein derived from a human and is highly homologous to a second protein derived from a mouse.

37. The method according to Claim 36, wherein said first protein is human PTN.

38. The isolated monoclonal antibody produced by the method according to Claim 34.